

### SPECIFICATION AMENDMENTS

Page 7, lines 8-11, replace the paragraph with the following amended paragraph:

The invention does not use overvoltage identification devices with subsequent disconnection of the in-phase transistor, rather it is based on the principle of limiting the current in the in-phase transistor using its ~~cut-off~~ pinch-off voltage.

Page 9, line 20 through page 10, line 20, replace the paragraph with the following amended paragraph:

- a) in the event of a short circuit to ground potential GND ( $V_{in} = 0V$ ), the voltage at the input E is also 0V and the protective circuit Ss operates normally.
- b) in the event of a short circuit to 14V ( $V_{bat1}$ ) active at the device connection A, the source voltage  $V_s$  of the transistor T1 increases to a value  $V_s = V_{bat1} - V_{th}$ , in other words to a value  $V_s < V_{bat1}$ . The transistor T1 is now in the ~~cut-off range~~ pinch-off region. The current through the diode D3 is limited by the protective resistor R2 to a predefined permitted value.
- c) in the event of negative transient voltages (for example ISO test pulses) active at the device connection A, the transistor T1 becomes

conductive, with its gate source voltage  $V_{gs}$  now being limited by the Zener diode D1. The gate resistor  $R_v$  limits the current flow through the Zener diode D1 to a tolerable value. The protective resistor R2 limits the current flow through the diode D4 of the protective structure of the microcontroller  $\mu C$ .

- d) in the event of a short circuit to the 42V on-board electrical system active at the device connection A, the input voltage  $V_{in}$  increases drastically – up to maximum 60V. The source voltage  $V_s$  of the transistor T1 will increase in the event of a short circuit to 14V to a value  $V_s = V_{bat1} - V_{th}$ , i.e. a value  $V_s < V_{bat1}$ . As the transistor T1 is now in the ~~cut-off range~~ pinch-off region, the total voltage difference drops there to the input voltage  $V_{in}$ . The drain source voltage  $V_{ds}$  of the transistor T1 becomes  $V_{ds} = V_{in} - (V_{bat} - V_{th})$ . The power loss  $P(T1)$  resulting at the transistor T1 is thereby determined by the voltage difference  $V_{ds}$  and the current  $I(R2)$  flowing through the protective resistor R2:  $P(T1) + V_{ds} \cdot I(R2)$ . The peak value occurring with transient voltages of 60V is  $< 100mW$ , the effective value being around 60mW, which can be managed easily using a standard housing for the transistor T1.